Problem Solving Reflection

After reading this article, I have to say that I am excited to get my students into groups and have them work through problems. I would make sure that they are mixed ability groups, and assign roles so that quieter students (perhaps pre-formal) are able to have a director role, and more assertive students can have a quieter role to see how the class dynamics change. My biggest fear with group problem solving is making sure that all of the students are working together, and one isn’t taking on more work than the other. I want to make sure that the students are using each other’s strengths to solve the problems and that they are committed to finding the solution. I think that one way to do this is to have the problem solving topic be something that they are interested in (like music, video games, television, etc) so that they already have some connection with the content, and they just have to finish up the thinking with the problem solving.

Activities

Mind map – Grade 11 University Prep Physics (D1.2)

Have students start with the idea of “Energy and Society” in the centre. Have students list all the topics and terms they can think of that relate to this topic. Then have students make a single mind map line the connects as many ideas as possible, that relate Energy and Society. Then have students reflect on the impact society and today’s world with electronics and energy consumption is having on the planet.

Modified Jigsaw – Grade 12 U/C Science (C1.1)

Bring forward the topic of preventing the spread of disease and illness in society, and the technological advances that have happened relating to disease spread. Break students off into smaller groups, and give each one a role to have – people who see decreased disease as a good thing, a bad thing, etc. They then have to research their perspective, and come back to the table ready to debate from their point of view.

Jigsaw – Grade 12 U/C Science (E2.3)

Have students break into groups of 4, giving each student a different role (SARS, C. difficile, avian flu, mad cow) and have them enter expert groups where they will research 1) how it happened, 2) what did it change in the world, 3) what can be done to prevent it next time. Have them come back to their home groups and explain to their members the different pieces of their disease.

Problems: (Grade 12 U/C Science E2.3)

1. Bring forward the idea of another major viral (not bacterial) potential pandemic. Have students brainstorm ways to combat the spread, based on their research from the previous jig saw learning
2. Knowing the rate at which people become infected, sick, and show symptoms, have students work forwards to figure out how many days/weeks/months it would take a cholera outbreak to spread country-wide.
3. Have students research one new disease-fighting technology invented within the last 50 years. Have them collaboratively explain how and why it works.
4. Ask students to figure out what is the easiest, cheapest, and fastest way to stop the spread of disease. Set them into groups, and have them create a marketing scheme to push this “new-found” way to stay healthy.
5. Tell students that there is a new disease discovered that only affects people with blue eyes and brown hair. There’s no cure, but transmission can only happen if you are within 3 feet of these people. The disease is not dangerous, and won’t kill you, but as was said, is incurable. Have students debate whether they should horde all the blue eyed brown hairs together and separate the world, or let it go and get everyone sick since it is not dangerous.